

Notice of Allowability

Application No.

09/919,024

Examiner

Taylor Victor Oh

Applicant(s)

HIRAO ET AL.

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/13/07.
2. ☒ The allowed claim(s) is/are 1-2, and 4, renumbered as claims 1-3.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other See Continuation Sheet.

Continuation of Attachment(s) 9. Other: drawings filed on 7/31/2001 are accepted by the examiner .

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The amendment after the final rejection filed on 9/13/07 has been entered and now it is in condition for allowance.

The Status of Claims:

Claims 1-2 and 4 are pending.

Claims 1-2 and 4 are allowable.

Reasons of Allowance

I. The following is an examiner's statement of reasons for allowance:

- The rejection of Claims 1-2 and 4 under 35 U.S.C. 103(a) as being unpatentable over Frank (U.S. 3,904,652) in view of Kerr (U.S. 3,366,648) has been withdrawn due to the Declaration of Harunori Hirao filed on 9/13/2007.
- The close prior art to the current invention are Frank (U.S. 3,904,652) and Kerr (U.S. 3,366,648).

Frank teaches a process for producing maleic anhydride from n-butane using a complex catalyst and a low oxygen concentration so as to avoid the flammable limit of the system.

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Kerr teaches a process for producing dicarboxylic acid anhydride, such as maleic anhydride by catalytic oxidation of aliphatic carbons and unsaturated hydrocarbons of from 4 to 6 carbon atoms, such as butene-1 or isobutylene in the presence of oxygen and a catalyst; furthermore, in order to avoid explosive hazards, 1.0 to 1.5 mole % of the monoolefin is recommended for optimum yield of the product.

However, the instant invention differs from the prior art in that there is no suggestion in either Frank or Kerr to increase the oxygen concentration to a concentration which is not less than the limiting oxygen concentration of oxygen forming an explosion range during the claimed starting up of the reactor ; furthermore, the Declaration of Harunori Hirao shows an unexpected result regarding the reduction of the amount of steam consumption and the duration of starting up reactor (2.5 tons of steam and 2.5 hours of the operation vs. 23.1 tons of steam and 7 hours of the operation) between the claimed invention and the Frank prior art.

Therefore, the claimed invention would not have been obvious to the person with an ordinary skill in the art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning the communication after allowance such as sending all post-allowance correspondence should be directed to "Box Issue Fee" or faxed directly to PUBS at 703-305-8755. This will expedite the process of these papers.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TAYLOR VICTOR OH
PRIMARY EXAMINER

9/24/07